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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/336,363	06/17/1999	KOJI MATSUYAMA	FUJO16.216	7540

26304 7590 07/02/2003

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EXAMINER

KIM, KEVIN

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 07/02/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/336,363

Applicant(s)

MATSUYAMA ET AL.

Examiner

Kevin Y Kim

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 2-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 2,4,7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al (US 6,188,682) in view of Sawahashi et al ((5,768,306).

Consider claims 7,9 and 11. Takagi et al discloses a detection device comprising "a code generation unit" (24,14) for sequentially generating a candidate for a disspreading code, a correlation value obtaining unit (16) and "a detection unit" (31) for detecting a correct code "from among candidate codes generated by the code generation unit. Though not described, the correlator (16) is generally comprised of an adder, a memory unit and a feedback for each chip/symbol to compute the correlation value between the entire input sequence and a candidate spreading code sequence. Tagagi et al fails to teach "a storage unit" for the input CDMA signal. Sawahashi et al teaches a memory for storing a received CDMA signal for a dwell time in order to allow a spreading code (with varying phases) to be compared to the input signal for a plurality of times. See col.5, line 60- col.6, line 23. Thus, it would have been obvious to one skilled in the art at the time the invention was made to store the received CDMA signal, as taught by Sawahashi et al, for the purpose of allowing the input signal to be correlated with multiple

candidate spreading codes until an intended one is found, at the front end of the Takagi et al's CDMA detection device. See col. 5, lines 35-63.

Regarding claims 2,4,10 and 12 further defining the correlation value obtaining unit such that it shifts the phase of the code, Takagi et al describes finding the timing at which the max correlation value is computed. See col.5, lines 46-49. Thus it would have been obvious to use a well known sliding correlator, as taught by Sawahashi et al, that shifts the phase/chip of the spreading code until a max/peak correlation is found.

Regarding claim 8, it is a matter of design choice to use a same memory unit for storage of the input signal and correlation values, specially in software implementation where different addresses would be used to different memory locations in a same memory unit.

4. Claim 3,5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al (US 6,188,682) in view of Sawahashi et al ((5,768,306), as applied to claim 7 above, and further in view of Shou et al (US 5,910,948).

Takagi et al in view of Sawahashi et al disclose all the subject matter claimed except for "a matched filter" as a means of obtaining correlation between the stored received signal and a predetermined code sequence. Shou et al describes that a short code is detected by a matched filter and a long code is detected by a sliding correlator. Thus, it would have been obvious to one skill in the art at the time the invention was made to modify Takagi et al's sliding correlator, which would have been used by the teaching of Sawahashi et al, to a matched filter for the purpose of detecting a short code and/or to add a matched filter for the purpose of detecting both a long code and a short code, as taught by Shou et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

kvk
June 24, 2003



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800